



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/674,474	10/01/2003	Shoji Hirayama	117379	5521

25944 7590 12/15/2005

OLIFF & BERRIDGE, PLC
P.O. BOX 19928
ALEXANDRIA, VA 22320

EXAMINER

HOPKINS, ROBERT A

ART UNIT	PAPER NUMBER
----------	--------------

1724

DATE MAILED: 12/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/674,474

Applicant(s)

HIRAYAMA ET AL.

Examiner

Robert A. Hopkins

Art Unit

1724

– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 4-9 is/are rejected.
- 7) ☒ Claim(s) 3 and 10 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

Claims 6 and 7 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claims 6 and 7 recite a specific air flow speed to be set, however the claims do not further limit the structural elements of claims 1 and 2 respectfully. Apparatus claims require dependant claims which further limit structural elements of an apparatus, and do not include additional functional limitations.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1,4,6 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Wetzel(5255167).

Wetzel teaches an air clean apparatus comprising an air intake(16) intended to be located at a lower position of a corner of a room and an air outlet(22) intended to be located at an upper position of the corner of the room, and at least a filter(18,23) and a

Art Unit: 1724

blower(20) both inside the air clean apparatus. Wetzel further teaches wherein both sides are configured to have a width of at least 180mm and a height of 2000mm or less, respectively.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2,5,7,9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wetzel(5255167) taken together with Yu(2003/0010211).

Wetzel teaches an air clean apparatus comprising an air intake(16) and an air outlet(22) provided in the vicinities of the lower portion and the upper portion of the air clean apparatus, respectively, and at least a filter(18,23) and a blower(20) inside the air clean apparatus, characterized in that when the air clean apparatus is vertically installed in a room, interior air is sucked by the blower through the air intake and then cleaned up inside the air clean apparatus, the cleaned air is then blown out through the air outlet to circulate the room, the air clean apparatus as a whole is formed in a vertically elongated shape, whose lower portion is located near a floor surface and the upper portion thereof has a height enough to extend up to the vicinity of a ceiling. Wetzel is silent as to a photocatalytic filter having an elongated shape extending in a direction along the longitudinal axis of the air clean apparatus main body. Yu teaches an air purifier(figure 1) having an elongated shape in the direction from a floor to a ceiling, and a blower(2),

Art Unit: 1724

and a photocatalytic filter(4; paragraph 0022,0026) upstream of the blower having an elongated shape extending in a direction along the longitudinal axis of the air clean apparatus main body. It would have been obvious to someone of ordinary skill in the art at the time of the invention to provide a photocatalytic filter having an elongated shape extending in a direction along the longitudinal axis of the air clean apparatus main body of Armbuster in order to generate a reaction to filter and dissolve organic gases harmful to the human body in the air flowing through(paragraph 0022 of Yu).

Wetzel further teaches wherein both sides are configured to have a width of at least 180mm and a height of 2000mm or less, respectively.

Wu further teaches at least one lamp(not shown but required for activating light catalyst composites(paragraph 0022 of Yu) extending in a direction along a longitudinal axis of the air clean apparatus.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wetzel(5225167).

Wetzel teaches all of the limitations of claim 8 but is silent as to at least one lamp extending in a direction along the longitudinal axis of the air clean apparatus. Examiner respectfully submits that it is well known in the art of air purification to provide for an elongated structure for containing an airflow, and to place an ultraviolet lamp in an elongated direction within the structure for removing bacteria and viruses within an airflow. Therefore, it would have been obvious to someone of ordinary skill in the art at the time of the invention to provide a lamp in a direction along the longitudinal axis of the structure of Wetzel for removing bacteria and viruses within an airflow.

Allowable Subject Matter

Claims 3 and 10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 3 recites “wherein a cross-section in side view of the Air clean apparatus as a whole has any shape of substantially fan-shaped, pentangular, and triangular”. Wetzel teaches a cross sectional shape of a rectangle. It would not have been obvious to someone of ordinary skill in the art at the time of the invention to provide a cross-section in side view of the Air clean apparatus as a whole which has any shape of substantially fan-shaped, pentangular, and triangular because modification of the structure of Wetzel would possibly change the intended airflow through the structure therefore teach against the function of the sterilizer of Wetzel.

Claim 10 recites “further comprising at least one transverse plate configured to close at least one end side of the photocatalytic filter”. Yu fails to teach at least one transverse plate configured to close at least one end side of the photocatalytic filter. It would not have been obvious to someone of ordinary skill in the art at the time of the invention to provide at least one transverse plate configured to close at least one end side of the photocatalytic filter because Yu does not suggest such a modification.

Response to Arguments

Applicant's arguments filed 11-15-05 have been fully considered but they are not persuasive.

Art Unit: 1724

Applicant argues Wetzel fails to disclose an air intake intended to be located at a lower position of a corner of a room and an air outlet intended to be located at an upper position of the corner of a room. Applicant argues that in figures 1 and 2, the room air sterilizer 10 is mounted near a window 13 or other wall penetrations(column 2 lines 58-59). Examiner respectfully submits claim 1 recites that the air intake and air outlet are intended to be located at certain positions within a room. Examiner respectfully submits that claim 1 does not require structure of the air clean apparatus which clearly requires a corner position. Examiner respectfully submits that by extending conduits 26 and 31, the structure of Wetzel could clearly be positioned in a corner of a room with proper wall supports to brace the structure across a corner. Examiner respectfully submits that the structural elements of the air clean apparatus are clearly anticipated by Wetzel, and as stated above Wetzel is clearly capable of being located in a corner of a room, therefore Wetzel is clearly capable of performing the intended use recited in claim 1.

Applicant further argues Wetzel fails to disclose that when the air clean apparatus is installed, a given quantity of circulating blowing air, which is decided according to the height from the floor underneath the air intake and the underside open are determined on the basis of particles of the maximum size to be eliminated at the air intake, as recited by claim 1. Applicant further argues that Wetzel describes an expandable sleeve portion 17 allows the overall length of the housing to be adjusted to fit the floor to ceiling distance of the room(col. 3 lines 1-3) Applicant further argues Wetzel describes, the lower end of the housing can extend to a manifold within a false floor of the room, rather than terminate above the floor(col 4 lines 15-17). Examiner

Art Unit: 1724

respectfully submits that the limitations noted above are functional limitations , and the quantity of circulating blowing air can be properly determined given an understanding of the type of particles to be filtered and the distance of the apparatus outlet above the floor. Examiner respectfully submits that very particulate laden air in a room would require a greater quantity of blowing air, and since the inlet and outlet of Wetzel are spaced from the floor to the ceiling, the blower in Wetzel inherently must have the power to sufficiently push the airflow based on the type and number of particles to be filtered. Examiner respectfully submits that the extension of the lower end of the housing to a manifold in a false floor is a preferred embodiment, but not the only embodiment. Clearly in figures 1 and 2, the lower end of the housing extends above the floor. Examiner respectfully submits that because claim 1 does not clearly distinguish over Wetzel in terms of the structure of the air clean apparatus, the claim is clearly anticipated by Wetzel.

Applicant argues with respect to claim 4 that in Wetzel, the overall length of the housing is adjusted to fit the floor to ceiling distance of a room, and that for most rooms that is at least 8 ft, which equals approximately 2440 mm, and therefore Wetzel does not anticipate a height of 2000 mm or less. Examiner respectfully submits that with regard to claim 4, applicant is making a general statement that all rooms are at least 8ft in height, which is inaccurate. Examiner respectfully submits that for a smaller room size height, the height of the Wetzel apparatus would be less than 2000mm.

With regard to claim 2, Applicant argues Yu does not disclose an air purifier having an elongated shape in the direction from a floor to a ceiling because Yu

Art Unit: 1724

expressly describes the air purifier has a shell body. Examiner respectfully submits that in figure 1 of Yu, the shell body is elongated along a clearly represented wall structure. Examiner also respectfully submits that it is not required for the obviousness rejection of the current office action for the shell body of Yu to be elongated from a floor to a ceiling, rather it is only required that Yu clearly suggests that it is known to include a photocatalytic filter in a vertically elongated direction within an air purifier housing for the purpose of generating a reaction for filtering and dissolving organic gases harmful to a human body in the air flowing through thereof(paragraph 0022 of Yu).

Applicant argues the metal filtering net 4 of Yu is not an elongated shape extending in a direction along the longitudinal axis of the air clean apparatus main body. Applicant argues that instead, the metal filtering net 4 has a rectangular shape(figures 1 and 3. Examiner respectfully submits that the metal filtering net is rectangular, however the rectangular filter net is still elongated along the longitudinal axis of the air clean apparatus main body as show in figure 1. Examiner also notes that the photocatalytic filter 6 shown in figure 2 of the current drawings is also a rectangular filter which is an elongated shape extending in a direction along the longitudinal axis of the air clean apparatus main body. Therefore, examiner respectfully submits that Yu clearly teaches incorporation of a photocatalytic filter within the elongated structure of the air cleaner apparatus of Wetzel, and examiner respectfully submits that such an incorporation would not hamper the function of the apparatus of Wetzel, but would enhance the capabilities of the apparatus of Wetzel by filtering and dissolving organic gases harmful to a human body in the air flowing through thereof.

Applicant further argues the metal filtering net is not arranged between the anterior filter and the blower, as recited in claim 2, and instead the metal filtering net is arranged after the fan 2 in figure 4. Examiner respectfully submits that figure 4 is a second embodiment of the invention as noted in the brief description of the drawings, and the embodiment indicated in the current office action which is being referred to is that of figure 1, wherein clearly the metal filtering net is arranged upstream of a fan. Examiner notes in figure 1 of Yu the outlet(14) is located at an upper position along with the fan 2, and since the airflow passes through the metal filtering net before passing through the outlet as indicated by the cross sectional view of figure 2, examiner respectfully submits that the metal filtering net must be located upstream from a fan. Examiner furthermore notes that since filter(18) of Wetzel is indicated as a prefilter, placing the metal filtering net of Wu between the prefilter 18 and the fan 20 would be the optimum location in order to prevent premature clogging of the metal filtering net by larger particulate. Examiner furthermore notes Yu teaches using a structure to prolong the usage life for the metal filtering net(paragraph 0023).

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not

Art Unit: 1724


mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert A. Hopkins whose telephone number is 571-272-1159. The examiner can normally be reached on Monday-Friday, 7am-4pm, alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on 571-272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Rah
December 12, 2005


ROBERT A. HOPKINS
PRIMARY EXAMINER
A.U. 1724